

A marked up version showing amendments to any claims being changed is provided in one or more accompanying pages separate from this amendment in accordance with 37 C.F.R. § 1.121(c)(1)(ii). Any claim not accompanied by a marked up version has not been changed relative to the immediate prior version, except that marked up versions are not being supplied for any canceled claim.

CLAIMS

65. A physical vapor deposition target comprising an alloy of copper and silver, the silver being present in the alloy at from less than 1.0 at% to 0.001 at%, the alloy having a substantially uniform microstructure and a fine grain size.

66. The physical vapor deposition target of claim 65 wherein the grain size is less than or equal to about 20 micrometers.

67. The physical vapor deposition target of claim 66 wherein the grain size is about 20 micrometers.

68. A physical vapor deposition target comprising an alloy of copper and silver, the silver being present as uniformly distributed fine precipitates in the alloy microstructure and being present in the alloy at from less than 1.0 at% to 0.001 at%.

69. The physical vapor deposition target of claim 68 wherein the alloy has a resistivity of from about 1.7 microohms.cm to about 1.82 microohms.cm.

70. The physical vapor deposition target of claim 68 wherein the grain size is less than or equal to about 20 micrometers.

71. A physical vapor deposition target comprising an alloy of copper and silver having a grain size of less than or equal to about 20 micrometers, the silver being present in the alloy at from less than 1.0 at% to 0.001 at%.

72. The physical vapor deposition target of claim 71 wherein the grain size is about 20 micrometers.

73. A physical vapor deposition target comprising an alloy of copper and silver, the silver being present in the alloy at from 50 at% to 70 at%, the alloy having a substantially uniform microstructure and a fine grain size.

74. A physical vapor deposition target comprising copper and having an average grain size of less than or equal to about 30 micrometers.

75. The physical vapor deposition target of claim 74 further comprising silver.

76. The physical vapor deposition target of claim 75 wherein the silver is present at from less than 1.0 at% to 0.001 at%.

77. The physical vapor deposition target of claim 75 wherein the average grain size is less than or equal to about 20 micrometers.

78. The physical vapor deposition target of claim 74 further comprising tin.
79. The physical vapor deposition target of claim 78 wherein the average grain size is less than or equal to about 20 micrometers.
80. The physical vapor deposition target of claim 78 wherein the tin is present at from less than 1.0 at% to 0.001 at%.
81. A physical vapor deposition target comprising a copper material having at least one element selected from the group consisting of silver and tin and having an electrical resistivity of from about 1.7 microohms.cm to about 1.82 microohms.cm.
82. The physical vapor deposition target of claim 81 wherein the resistivity is less than about 1.8 microohm.cm.
83. The physical vapor deposition target of claim 81 wherein the copper material comprises an average grain size of less than about 30 micrometers.
84. The physical vapor deposition target of claim 81 wherein the at least one element is tin, the tin being present in the copper material at from less than 1.0 at% to 0.001 at%.

85. The physical vapor deposition target of claim 81 wherein the at least one element is silver, the silver being present in the copper material at from less than 1.0 at% to 0.001 at%.

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contd.